

Notice of Allowability

Application No.

10/817,302

Examiner

Paul W. Schlie

Applicant(s)

NICHOLS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to an examiner initiated interview and corresponding amendment dated 9/27/06.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

2. Authorization for this examiner's amendment was given in a telephone interview with Samuel M. Freund on 9/27/06, whereby:

Claims 1, 7, 11, and 13-14 are amended; and

Remaining claims remain as previously presented.

3. The application has been amended as follows:

Claim 1 (currently amended): A method for temporarily placing a data storage unit in an off-line condition within a redundant data storage system having a plurality of data storage units disposed in at least one logical volume in an ~~off-line~~ on-line condition, which comprises the steps of:

placing a selected data storage unit in an off-line condition for a purpose unrelated to a failure thereof for a period of time;

automatically storing data directed to the logical volume in which the selected data storage unit is disposed in a logging repository disposed outside of the logical volume in which the selected data storage unit is disposed during the period of time;

detecting a failure in a data storage unit other than the selected data storage unit in the logical volume in which the selected data storage unit is disposed;

placing the selected data storage unit in an on-line condition following the period of time;

downloading data stored in the logging repository onto the selected data storage unit;

allowing data directed to the logical volume in which the selected data storage unit is disposed to be stored in the logical volume in which the selected data storage unit is disposed; and
updating redundant data within the logical volume in which the selected data storage unit is disposed.

Claim 2 (original): The method of claim 1, wherein the selected data storage unit is placed in an off-line condition for a period of time for the purpose selected from the group consisting of updating firmware, diagnostic tests, unit replacement, and unit reset.

Claim 3 (original): The method of claim 1, wherein the redundant data storage system is selected from the group consisting of RAID 1, RAID 3 and RAID 5.

Claim 4 (original): The method of claim 1, wherein the logical volume comprises a plurality of disk drives.

Claim 5 (original): The method of claim 1, wherein the logging repository comprises a disk drive.

Claim 6 (original): The method of claim 1, wherein said step of the storing data directed to the logical volume in which the selected data storage unit is disposed in a logging repository disposed outside of the logical volume in which the selected data storage unit is disposed, and said step of allowing data directed to the logical volume in which the selected data storage unit is disposed to be stored in the logical volume in which the selected data storage unit is disposed are achieved using the volume/drive manager of said redundant data storage system.

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Claim 7 (currently amended): A method for updating firmware in a selected data storage unit which has not failed in a redundant data storage system having a plurality of data storage units disposed in at least one logical volume which is in an on-line condition, where a second data storage unit in the at least one logical volume in which the selected data storage unit is disposed has failed, comprising:

downloading firmware onto the selected data storage unit for a purpose unrelated to a failure thereof;

automatically storing data directed to the at least one logical volume in which the selected data storage unit is disposed in a logging facility outside of the at least one logical volume in which the selected data storage unit is disposed during said step of downloading firmware;

downloading data stored in the logging facility onto the selected data storage unit following said step of downloading firmware; and
updating redundant data in the at least one logical volume in which the selected data storage unit is disposed.

Claim 8 (original): The method of claim 7, wherein the redundant data storage system is selected from the group consisting of RAID 1, RAID 3 and RAID 5.

Claim 9 (original): The method of claim 7, wherein the logical volume comprises a plurality of disk drives.

Claim 10 (original): The method of claim 7, wherein the logging facility comprises a data storage unit adapted to store data directed to the logical volume in which the selected data storage unit is disposed during said step of downloading firmware.

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Claim 11 (currently amended): An apparatus for downloading firmware on a selected data storage unit disposed in a redundant data storage system having a plurality of data storage units disposed in at least one logical volume in an on-line condition, comprising in combination:

- (a) means for downloading firmware onto a selected data storage unit from said plurality of data storage units in said at least one logical volume for a purpose unrelated to a failure thereof;
- (b) a logging facility for automatically storing data directed to said at least one logical volume in which said selected data storage unit is disposed during the firmware download, said logging repository being located outside of said at least one logical volume;
- (c) means for detecting a failure in a data storage unit which has not been selected in said at least one logical volume;
- (d) means for downloading data stored in said logging facility onto said selected data storage unit; and
- (e) means for updating the redundant data in said data storage system.

Claim 12 (original): The apparatus of claim 11, wherein said redundant data storage system is selected from the group consisting of RAID 1, RAID 3 and RAID 5.

Claim 13 (currently amended): The ~~method~~ apparatus of claim 11, wherein said logical volume comprises a plurality of disk drives.

Claim 14 (currently amended): The ~~method~~ apparatus of claim 11, wherein said logging facility comprises a data storage unit adapted to store data directed to said at least one logical volume in which said selected data storage unit is disposed during the firmware download.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul W. Schlie whose telephone number is 571-272-6765. The examiner can normally be reached on Mon-Thu 8:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 517-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


PIERRE BATAILLE
PRIMARY EXAMINER
10/05/06